Summary of Habitat Types Provided on DNR-managed Forest Lands in the Five West-side Planning Units

pg. IV.159 - change the heading at the top of the page:
HABITATS PROVIDED ON DNR-MANAGED LANDS ~~NOT SUBJECT TO SPECIFIC HCP REQUIREMENTS~~

pg. IV.159 - delete first paragraph subheading and replace paragraph with:
After a natural disturbance, such as fire, a stand regenerates and develops through a succession of seral stages. Managed forests follow a similar pattern of succession following clearcut timber harvest. A variety of wildlife habitats on DNR-managed lands will occur in the different seral stages (Brown 1985) described below:

pg. IV.159 - change last paragraph on page:
Table IV.13 lists ~~examples of representative species that could use the types of habitat expected to be provided under the HCP on DNR-managed lands in the five west-side planning units~~ the types of habitat expected to be provided under the HCP on DNR-managed lands in the five west-side planning units. Examples of representative species that might use that habitat type, management activities that may be conducted, potential negative impacts that may result from the management activities, and benefits expected to accrue from the HCP are given for each habitat type. Additional details regarding the management activities are included in Section H (Forest Land Management Activities) of this chapter.

pg. IV.162 - add the following heading and paragraph after Table IV.13:
Provision of a Range of Forest Types Across the HCP Landscape

DNR management activities that will occur under the HCP will ensure a range of forest types in adequate amounts to provide for multi-species conservation across the landscape covered by the HCP. DNR has modeled the age-class distribution that will likely result from expected management under the HCP and existing policies. Results from this modeling have been used to develop a table (see Table IV.14) of expected percentages of each of several forest habitat/structural types, using age-class as a surrogate, that would likely exist 100 years following implementation of such management.

pg IV.163-167 - delete this section entirely and replace with:
G. Conservation Assessments for Federally Listed Plant Species, Candidate Plant Species, and Plant Species of Concern

In general, the federally listed and proposed endangered and threatened plant taxa described below have very limited ranges and narrow habitat requirements and are restricted to very small areas. Because of these factors, it is anticipated that they can be effectively managed while meeting other land-management objectives. DNR maintains a database on these species, including both site-specific and species-specific information,

that will be useful in locating and protecting known sites and potential habitat. However, no comprehensive inventories of these species exist for DNR-managed lands.

Federally Listed Plant Species

Brief statements about each species are provided below; additional information can be obtained from either the U.S. Fish and Wildlife Service Endangered Species office in Olympia or DNR's Natural Heritage Program.

ARENARIA PALUDICOLA

Swamp sandwort was historically known to occur in "swamps near Tacoma" but has not been seen or collected in Washington since the late 1800s. Reports from several other western Washington locations have been determined to be misidentifications. However, additional inventory in Washington is needed, primarily in wetlands within the Puget Lowlands. The only known extant site in the world is found in a brackish wetland in California. However, this species could occur in wetlands near the Pacific Coast, Willapa Bay, or Puget Sound. The HCP for the west-side planning units and the OESF would likely provide better protection of this species' habitat because of their better overall wetland and riparian protections.

HOWELLIA AQUATILIS

Water howellia is an aquatic annual generally found in vernal ponds or portions of ponds in which there is a significant seasonal draw down of the water level. All known ponds have a deciduous tree component around their perimeters; most have conifers as well. The species is currently known to occur in Washington, Idaho, and Montana. In Washington, it has been found in Clark, Pierce and Spokane Counties. Historically it was also known to occur in Thurston and Mason Counties, as well as in Oregon and California. There has been no inventory of water howellia on DNR-managed lands, but if water howellia does occur in the planning area, then the HCP would reduce adverse effects because it offers better overall wetlands protection.

LOMATIUM BRADSHAWII

Bradshaw's lomatium was thought to be endemic to the Willamette Valley in Oregon until 1994, when it was discovered in Clark County, Washington. The one site in Washington is a seasonally flooded wetland dominated by grasses, sedges and rushes. As far as is now known within the HCP planning area, this species is restricted to wetlands in flood-plain habitats at low elevations in the Columbia Planning Unit. Although not known to occur on DNR-managed lands, some DNR-managed lands may provide potential habitat. The HCP provides better protection of this species' habitat because of its better overall wetland and riparian protections. The OESF would have no effect, as the species is not known or expected to occur in the planning unit.

SIDALCEA NELSONIANA

Nelson's checkermallow was also thought to be restricted to Oregon until relatively recently. There are known sites in Cowlitz and Lewis Counties, Washington. These sites are in low elevation, moist meadows within the South Coast and Columbia HCP planning units. These sites may qualify as wetlands. There is a limited amount of DNR-managed land that contains suitable habitat. There is expected to be no change regarding the

effects of management on this species due to its restriction to open, moist meadow habitats.

Plant Species Proposed for Federal Listing

CASTILLEJA LEVISECTA

Golden paintbrush occurs from Thurston County northward to Vancouver Island. Historically it was also known to occur in the Willamette Valley in Oregon and in Clark County, Washington. The species is restricted to grasslands and areas dominated by a mixture of grasses and shrubs. Although this species occurs in grasslands, it could be affected by timber harvest through road building, yarding, or decking logs on adjacent grasslands. Where conifers invade *C. levisecta* habitat, the removal of trees is beneficial to the species. There are only 10 known sites with *C. levisecta* in the world, eight of which are in Washington and one of these is a DNR-managed natural area preserve. All sites are quite small in area and are subject to a variety of threats, the most serious of which is the invasion by a mixture of Douglas-fir, Scot's broom, blackberries, and roses. It is not known to occur, nor is it expected to occur within the OESF. There is little to no DNR-managed land adjacent to sites that harbor this species. The HCP is not expected to have any effect on this species.

Federal Candidate Plant Species

There is one vascular plant species that is a candidate for listing (as of February 1996) under the federal ESA which is known to occur, or is reasonably suspected of occurring, within the HCP planning area. Additional information about this species can be obtained from DNR's Natural Heritage Program.

SIDALCEA OREGANA VAR. *CALVA*

This taxon is restricted to the Chelan Planning Unit. It may occur on DNR-managed forest land. It can occur along small riparian areas and some of the sites would qualify as wetlands. The HCP can be expected to provide better protection due to the overall better riparian zone and wetlands protections. The OESF would have no effect since the taxon is not known or expected to occur on the OESF.

Plant Species of Concern

There are a number of vascular plant taxa that are species of concern to the U.S. Fish and Wildlife Service (as of February 1996) which are known to occur, or are reasonably suspected of occurring, within the HCP planning area. Additional information about these species can be obtained from DNR's Natural Heritage Program.

ABRONIA UMBELLATA SSP. *ACUTALATA*

This taxon is thought to be extirpated from the state of Washington. The historic locations were coastal sand dunes. Timber management under the HCP and OESF would have no effect.

ARTEMISIA CAMPESTRIS SSP. *BOREALIS* VAR. *WORMSKIOLDII*

This taxon is restricted to areas immediately adjacent to the Columbia River in Grant and Klickitat Counties. The areas do not support conifers and are far enough removed from DNR forest management that management activities are not likely to have any impact.

ASTER CURTUS

This taxon is restricted to grassland habitats in the lowlands of the Puget trough. It may occur in grasslands adjacent to DNR-managed forest land. It is not known nor expected to occur on the OESF. Because the plant is generally restricted to nonforested habitats, the HCP and the OESF are expected to have little effect on this species.

ASTRAGALUS AUSTRALIS VAR. *OLYMPICUS*

This taxon is restricted to relatively high elevations in the northeastern portion of the Olympic Peninsula. It is only known to occur in the Olympic National Park and Olympic National Forest.

ASTRAGALUS PULSIFERAE VAR. *SUKSDORFII*

In Washington, this taxon is restricted to the Klickitat Planning Unit and occurs in somewhat open ponderosa pine stands with a relatively sparse understory. One known site of *A. pulsiferae* is on DNR-managed land designated as a Dispersal habitat management area. Higher harvest levels may provide better habitat protection for this taxon than lower harvest levels. However, increased harvest levels may not be a recommended method for enhancing the habitat for this taxon; prescribed burns, or allowing natural fires to burn, would likely be a preferable method. The OESF would have no effect, as the taxon is not known or expected to occur on the OESF.

ASTRAGALUS SINUATUS

This taxon does not occur within the HCP planning area. It is restricted to a very small range east of the planning area in Chelan County

BOTRYCHIUM ASCENDENS

This taxon appears to have a fairly broad ecological amplitude and wide geographic range. However, there is insufficient information available regarding its response to timber harvest activities to evaluate the HCP and its effects.

CALOCHORTUS LONGEBARBATUS VAR. *LONGEBARBATUS*

In Washington, this taxon is restricted to the Klickitat Planning Unit. It could occur on DNR-managed lands. It occurs primarily in open grasslands, but occasionally extends into open forest stands. Within the Yakama Indian Reservation, it can be found within harvested units and along roadway openings. Although this taxon could benefit from timber harvest in areas adjacent to meadow openings, it is anticipated that there will be no change regarding the effects of management on this species. The OESF will have no effect since the taxon is not known or expected to occur on the OESF.

CASTILLEJA CRYPTANTHA

This taxon does not occur and is not expected to occur, on DNR-managed lands within the HCP planning area. It is restricted to subalpine and alpine meadows around the northern perimeter of Mt. Rainier.

CIMICIFUGA ELATA

This taxon occurs in DNR Dispersal management areas and potentially within NRF management areas. The taxon occurs within the North Coast, Straits, South Puget, South Coast, and Columbia planning units. The HCP is expected to be beneficial due to the lower timber harvest levels in NRF and Dispersal management areas. The OESF would have no effect, since the taxon is not known or expected to occur on the OESF.

CORYDALIS AQUAE-GELIDAE

This taxon occurs primarily along Types 3 through 5 waters, including small seeps, and is restricted to the Columbia Planning Unit. It could occur on DNR-managed lands. The HCP is expected to provide better protection due to the overall better riparian zone protections.

CYPRIPEDIUM FASCICULATUM

This taxon occurs within a variety of coniferous stands within the Klickitat, Yakima, and Chelan planning units. It could occur on DNR-managed lands. There is insufficient information available regarding this species' response to timber harvest activities to evaluate the HCP and its effects.

DELPHINIUM LEUCOPHAEUM

This taxon is essentially a grassland species and is restricted to the South Coast Planning Unit. It could occur on DNR-managed lands. The HCP is expected to have no effect on this species. The OESF would have no effect since the taxon is not known or expected to occur on the OESF.

DELPHINIUM VIRIDESCENS

This taxon is restricted to the Chelan and Yakima planning units. It may occur on DNR-managed lands. It can occur along small riparian areas and some of the sites would qualify as wetlands. The HCP can be expected to provide better protection due to the overall better riparian zone and wetlands protections. The OESF is expected to have no effect since the taxon is not known or expected to occur on the OESF.

DODECATHEON AUSTROFRIGIDUM

In Washington, this taxon is currently known only to occur in the Mt. Colonel Bob Wilderness Area of the Olympic National Forest. However, in Oregon it is known to occur in lower elevation riparian areas. The HCP and the OESF would presumably provide better protection due to overall better riparian zone protections.

ERIGERON HOWELLII

In Washington, this taxon is restricted to the Columbia Planning Unit. It generally occurs in open areas. Canopy removal is not expected to have a negative impact, but ground-disturbing activity might. There is insufficient information to analyze how the HCP

would affect this species. The OESF would have no effect since the taxon is not known or expected to occur on the OESF.

ERIGERON OREGANUS

In Washington, this taxon is restricted to the Columbia Planning Unit. It occurs within owl dispersal habitat; however, it is found primarily on exposed rock. Canopy removal will not generally have a negative impact. There is probably no change regarding the effects of management on this species. The OESF would have no effect since the taxon is not known or expected to occur on the OESF.

FILIPENDULA OCCIDENTALIS

In Washington, this taxon is restricted to river and creek banks in southwest Washington, in the Columbia and South Coast HCP planning units. Some DNR-managed land is relatively close to known sites for this taxon. It is expected that the HCP could provide more protection because of its better riparian protections. The deferrals and protections for the marbled murrelet provided by the HCP could also benefit this species. The OESF would have no effect since the taxon is not known or expected to occur on the OESF.

HACKELIA VENUSTA

This taxon is restricted to the Chelan Planning Unit. All known sites are on USFS lands. Some DNR-managed land occurs within the range of this species. Canopy removal would not have a negative impact and in fact might be beneficial. However, ground-disturbing activities could have a negative impact. At present, there is insufficient data to analyze the HCP and its potential effects on this species.

LATHYRUS TORREYI

This taxon was thought to be extirpated from the state of Washington. The historic locations were scattered in Clark and Pierce Counties. The only extant site is at McChord Air Force Base, where it inhabits a mature conifer stand with an open understory. Timber management on DNR-managed lands under the HCP and OESF is unlikely to have an adverse effect.

LOMATIUM SUKSDORFII

In Washington, this taxon is restricted to the Klickitat Planning Unit. It may occur on DNR-managed lands. It can occur within riparian areas, but it is not restricted to such areas. It occurs on slopes that may support scattered individual conifers, on the edges of conifer stands, or in stand openings. There is likely no change regarding the effects of management on this species. The OESF would have no effect since the taxon is not known or expected to occur on the OESF.

LOMATIUM TUBEROSUM

This taxon is restricted to talus slopes, mostly in nonforested areas, although there can be trees adjacent to the talus. Conservation measures for talus slopes will benefit this species. Within the HCP planning area, this taxon is known only to occur within the Yakima Planning Unit.

LUPINUS SULPHUREUS VAR. *KINCAIDII*

This taxon is essentially a grassland species and, in Washington, is restricted to the South Coast Planning Unit. It is unlikely to occur on DNR-managed lands. The HCP is expected to have no effect on this species. The OESF is expected to have no effect since the taxon is not known or expected to occur on the OESF.

MECONELLA OREGANA

This taxon occurs in grasslands, sometimes adjacent to forested areas, although generally in somewhat savannah-like conditions. It is expected that there would no change regarding the effects of management on this species. The OESF would have no effect since the taxon is not known or expected to occur on the OESF.

MIMULUS JUNGERMANNIOIDES

This taxon was historically known to occur in the Klickitat Planning Unit, but is currently thought to be extirpated from the state of Washington. It is restricted to seepage areas in exposed basalt. It is unlikely to occur on DNR-managed lands. The HCP is not expected to have any impact on this taxon. The OESF would have no effect since the taxon is not known or expected to occur on the OESF.

PENSTEMON BARRETTIAE

This taxon occurs primarily on exposed basalt in Washington and is known to occur only in the Klickitat Planning Unit. It may occur on DNR-managed lands. It may occur within riparian areas, although it is not restricted to riparian areas. There is expected to be no change regarding the effects of management on this species. The OESF would have no effect since the taxon is not known or expected to occur on the OESF.

PETROPHYTUM CINERASCENS

This taxon is within the very eastern edge of the Chelan Planning Unit. In fact, it is restricted to rock outcrops adjacent to the Columbia River.

RANUNCULUS RECONDITUS

This taxon is known to occur in Klickitat County, but not within the HCP planning area.

RORIPPA COLUMBIAE

This taxon is restricted to the immediate shores of the Columbia River and islands in the Columbia River along the Hanford Reach and in Skamania County. No DNR-managed lands are known to harbor this species and timber management under the HCP is not expected to have an impact.

SILENE SEELYI

This taxon is restricted to cracks in exposed rock in a small portion of the Chelan, and maybe the Yakima, planning units. Although it is not known to occur on DNR-managed lands, some DNR-managed lands are in close proximity to known locations for this species. The species is probably not affected to any great degree by canopy removal. It is expected that there would be no change regarding the effects of management on this species.

SISYRINCHIUM SARMENTOSUM

In Washington, this taxon is restricted to the Klickitat Planning Unit. It may occur on DNR-managed lands. It occurs in moist meadows and small forest openings, and it may be occur in riparian and/or wetland areas. The HCP can be expected to provide better protection due to the better riparian and wetland protections. The OESF would have no effect since the taxon is not known or expected to occur on the OESF.

SULLIVANTIA OREGANA

In Washington, this taxon is known to occur only in the Columbia Planning Unit and occurs within waterfall spray zones and seepage areas. A site with *S. oregana* is located in a DNR-managed natural area preserve, and other sites may occur in DNR-managed parcels adjacent to the preserve. The HCP is expected to provide better protection because of its better riparian and wetland protections The OESF would have no effect since the taxon is not known or expected to occur on the OESF.

TAUSCHIA HOOVERI

This taxon is restricted to lithosolic, nonforested habitats. It is known to occur on DNR-managed land. It occurs mostly east of the HCP planning area, although some sites are within the Yakima and perhaps the Klickitat planning units.

TRIFOLIUM THOMPSONII

This taxon is known to occur only in the Chelan Planning Unit. It is a grassland species, but it also occurs on the edge of forest stands. Fire is important in maintaining its habitat. This species is known to occur on DNR-managed lands. There is expected to be no change regarding the effects of management on this species. The OESF would have no effect since the taxon is not known or expected to occur on the OESF.

H. Forest Land Management Activities

Introduction

pg. IV.169 - change third paragraph:

The ranges of activity level (summarized in Table IV.~~14~~ 15 at the end of this section) are based upon (1) historical levels, (2) estimates of activity required to achieve conservation objectives in the harvest simulator model, (3) evaluation of current criteria for selecting potential forest stands for various silvicultural treatments, and (4) estimates from DNR Regions of the level of activity that could occur operationally over the next decade...

pg. IV.170 - delete entire fifth paragraph

Activities Common to All Planning Units

pg. IV.171 - add to the first paragraph on pg: 171:

...The rate of land transactions will be influenced by opportunity and funding. (See the Implementation Agreement.) Land transactions are not expected to increase the level of take for any species covered by the incidental take permit. DNR commits to maintaining the conservation objectives described in Chapter IV of the HCP in the course of its land

disposition program, as outlined in the Implementation Agreement. In the event that a land disposition increases the level of take, or if land disposed of by DNR does not remain subject to the HCP and the cumulative impact of the disposition would have a significant adverse effect on a particular species, DNR will follow the process for making a major amendment to the HCP and the ITP as outlined in the Implementation Agreement. The land transaction program is not intended to alter DNR's obligations for mitigation as set forth in this HCP.

pg. IV.171 - change paragraph under heading Nontimber Resources and add:
...DNR markets nontimber resources that include but are not limited to road use permits, sand and gravel sales, sales of special forest products such as boughs and brush, prospecting leases and mining contracts, oil and gas leases, grazing permits and leases, electronic site leases, and other special permits, licenses, sales, and leases. ~~(See the Implementation Agreement.)~~ At the 1996 level of these activities, no take, or insignificant (i.e., *de minimis*) take is occurring. Beginning no later than January 1, 1999, new/renewed permits, contracts, or leases for such activities will include the commitments of the HCP, such that they will not increase the level of take beyond a *de minimis* level. The level of impact resulting from these activities will be reviewed by DNR and the Services during the annual meetings as described in subsection 16.2b of the Implementation Agreement. DNR will monitor the level of such activities and provide this information to the Services prior to their annual meetings.

Many nontimber resource activities are subject to review under SEPA (WAC 197-11). Except for those actions that are categorically exempt (WAC 197-11-800), other government agencies and interested parties are notified of proposed actions as required by SEPA. As a matter of course, DNR notifies the Department of Fish and Wildlife, Department of Ecology, and the appropriate county and tribal governments. Government agencies and interested parties are notified by issuing either a determination of nonsignificance, a mitigated determination of nonsignificance, a public scoping notice, or a draft IS. Agencies and interested parties can comment on and appeal the findings of the SEPA determination.

Current DNR nontimber resource uses are described, including the current level of each activity, below:

Rights of way - Policy No. 26 of the Forest Resource Plan addresses granting public rights of way. It says:

> "The department will grant rights of way to private individuals or entities when there is an opportunity for enhancing trust assets and when detriments are offset."

Easements for rights of way are granted for roads, powerlines, and pipelines. During the 9-year period between 1983 and 1991, approximately 2,100 rights-of-way were issued. These involved approximately 105 miles of new road construction and removed approximately 2,500 acres from timber production. Typically, these roads are part of the same road network used for forest management and would be subject to the same conservation measures for design, construction, use, maintenance, and abandonment

described in the HCP. Large powerline and pipeline rights of way are subject to review under SEPA.

DNR has adopted the following SEPA policy for granting rights of way (WAC 332-41-665):

> "Recognizing that construction and/or reconstruction under upland right of way grants can create adverse impacts to the elements of the environment, it is the policy of the department to condition grants where necessary:
>
> (i) to protect all surface resources including but not limited to soil and water, through authorized right of way operation on public lands, and to cause rehabilitation or reestablishment on a continuing basis the vegetative cover, soil stability, and water condition appropriate to intended subsequent use of the area;
>
> (ii) to meet air quality standards; and
>
> (iii) to protect recreational and special use areas under lease by requiring mitigating action."

Special Forest Products - Policy No. 8 of the Forest Resource Plan addresses special forest products. It says:

> "The department will encourage and promote the sale of special forest products where appropriate and will market them in a manner consistent with the overall policies of this plan."

western greens (salal, beargrass, huckleberry, rushes, ferns, mosses) - Currently there are approximately 65 leases covering 30,000 acres (average 460 acres/lease) and 240 one-year individual, nonexclusive permits for designated blocks of DNR-managed land. Over the term of the HCP, it is expected that individual permits will slightly increase and the amount of leased acreage will decrease. The long-term decrease in leased acreage is projected from the current trend in decreasing U.S. share of the international market in floral greens. Collection of branches from salal, evergreen huckleberry, and ferns is a self-limiting process because only part of foliage of any plant meets commercial quality standards. Thus, harvesting practices result in retention of most of the plant, and consequently a photosynthetic base for the regeneration of new foliage (USFS 1995). No significant environmental damage has been observed as a result of DNR leases, though no formal assessment has been conducted. The long-term ecological effects of floral green collection are unknown. Monitoring of such activities would allow for adjustment of lease conditions should adverse environmental impacts be documented. Collection of moss has potential negative environmental impacts (FEMAT 1993). Collection of moss from DNR-managed lands is not currently a large program. Should this situation change, however, some monitoring of effects of moss collection and/or regulation of moss collection may be needed. Leases for brush picking are categorically exempt from SEPA review (WAC 197-11-800). Actions or activities that are categorically exempt are those that would not normally have significant adverse environmental impacts. An action or activity that is categorically exempt may be subject to review under SEPA if it occurs in an environmentally sensitive area. For example, a categorically exempt action occurring in a wetland or in an area with a state listed species may be subject to review under SEPA.

Christmas greens (cut noble fir, silver fir, white pine, red cedar, and Douglas fir boughs) - There are 14 current 1- to 3-year sales involving 9,000 acres total and 3, 10-year leases

involving 3,000 acres total. Additionally, small volumes under $1,000 in value and involving less than 1,000 acres are permitted to approximately 15 individuals or small companies per year. A determination of nonsignificance was issued under SEPA for the collection of Christmas greens.

mushrooms - No commercial harvesting is allowed. Recreational harvesting is allowed with restrictions on quantity. Recreational harvest is limited to 3 gallons per person per day of a single species and no more than 9 gallons per person per day total. Compliance is not currently monitored and some commercial-scale harvest may be occurring on DNR-managed lands. Most mushroom harvesting on DNR-managed lands occurs in the South Puget Sound planning unit, with some occurring on the Olympic Peninsula and in the western portion of the Klickitat Planning Unit. Individual commercial permits are currently under consideration. Over the term of the HCP, it is expected that harvest from the wild will increase. It is likely that access to lands for mushroom collection will diminish due to road closures. Mushroom collection does not appear to occur very distant from roads. Most edible mushrooms are the fruiting bodies of ectomycorrhizal fungi, which play important roles in forest ecosystem processes, including providing forage for northern flying squirrels, which are an important prey item of spotted owls. The long-term ecological effects of mushroom collection are unknown (FEMAT 1993). No environmental impact assessment of mushroom collection has been conducted specifically on DNR-managed lands. It is thought that the highest potential for negative damage to the resource could come from disruptive collection methods such as raking (USFS 1995). This type of collection method has not been widely observed on DNR-managed lands. Monitoring of mushroom collection levels and utilization of any relevant research on the ecological effects of mushroom harvesting would assist in HCP implementation.

Christmas trees - There are currently 5 leases to grow Christmas trees on DNR-managed lands covering less than 600 acres. All current leases expire within the next 8 years. It is not expected that this program will expand in the future, and may be eliminated altogether due to lack of market demand. Leases for Christmas tree harvesting are categorically exempt from SEPA review (WAC 197-11-800).

medicinals - DNR is not involved in any medicinal research or management at this time. There are 1 to 2 small-value annual permits (for example, cascara bark).

firewood - The Revised Code of Washington (RCW 76.20) requires that DNR offer firewood, up to 6 cords per person per year, for free and authorizes direct sales and bid/auction sales. In most Regions, demand for free personal use firewood is greater than supply. The Regions make available what they can and there is no estimate available for the amount of material removed or the acreage involved. Wood collected as personal use firewood is generally down logs located near roads or landings. Over the course of the HCP, it is expected that firewood removal will decrease because of more restrictions on woodstove use in urban areas and concerns for wildlife and biomass loss. At present, licenses or approvals for firewood removal are categorically exempt from SEPA review (WAC 197-11-800).

Valuable Material Sales- Sand and gravel sales are handled under sale contracts. Current contracts cover approximately 30 to 40 acres each and total less than 1,000 acres. Most commercial contracts do not apply to forested areas. However, 15 to 20 commercial contracts are in forested areas, including some smaller pits that are primarily for DNR use but from which occasional loads are sold to other forest land managers. If the sand or gravel material is sold, then the activity is subject to review under SEPA, and the purchaser is responsible for obtaining all necessary permits. DNR has adopted a SEPA policy for surface mining (WAC 332-41-665), described below, that applies to sand and gravel mines which are subject to SEPA.

Water quality in the vicinity of sand and gravel mines is protected through the National Pollutant Discharge Elimination System Permit Program (WAC 173-220). The Department of Ecology administers this program and issues NPDES permits only to facilities that can meet the surface and groundwater standards described in WAC 173-201A and WAC 173-200, respectively.

The purchaser must file a plan of operations that is reviewed by the DNR administrative Region. Under the HCP, the plan of operations would be reviewed to ensure compliance with the commitments of the HCP. Exploration holes drilled on DNR-managed land in search of sand and gravel deposits are plugged and the site restored. For example, if the site was used for timber production before exploration, then, where feasible, the site is restored for continued timber production. The reclamation of surface mines, excluding those used for on-site forest road construction or maintenance, is regulated by the Surface Mining Act (RCW 78.44), which is enforced by DNR.

Prospecting Leases/Mining Contracts - A mineral prospecting lease permits the lessee to prospect for metallic and industrial (nonmetallic) minerals. The lease must be converted to a mining contract before mine development or operations commence. There are 13 existing leases in the HCP Planning Area. Most prospecting leases are 500 to 600 acres. Activities conducted under mineral prospecting leases are exempt from SEPA, unless it is determined that a specific activity needs to undergo a SEPA review. The lessee is responsible for obtaining all necessary permits, although there are limited permits required for exploration. Before any surface disturbing work is conducted on a leased area, the lessee must file a plan of operations that is reviewed by the DNR administrative Region. Under the HCP, the plan of operations would be reviewed to ensure compliance with the commitments of the HCP. Exploration holes drilled on DNR-managed land in search of mineral deposits are plugged and the site restored. Roads may be constructed during mineral exploration. Typically, these roads are part of the same road network used for forest management and would be subject to the same conservation measures for design, construction, use, maintenance, and abandonment described in the HCP.

There are 17 mining contracts in the HCP Planning Area, but there are no active open-pit metallic or open-pit industrial mineral mines or underground mines on DNR-managed land. The only activity occuring under these contracts is exploration. Conversion of a mineral prospecting lease to a mining contract requires a phased review under SEPA. This review is phased since the location and scope of future activities is not known. An

EIS may be required if large-scale mining is contemplated. DNR has adopted the following SEPA policy for surface mining (WAC 332-41-665):

> "To provide that the usefulness, productivity, and scenic values of all lands and waters involved in surface mining within the state will receive the greatest practical degree of protection and restoration, the following aspects of surface mining will be conditioned:
>
> (i) proposed practices to protect adjacent surface resources;
>
> (ii) specifications for surface gradient restoration to a surface suitable for the proposed subsequent use of the land after reclamation is completed, and proposed method of accomplishment;
>
> (iii) matter and type of revegetation or other surface treatment of disturbed areas;
>
> (iv) method of prevention or elimination of conditions that will create a public nuisance, endanger public safety, damage property, or be hazardous to vegetative, animal, fish, or human life in or adjacent to the area;
>
> (v) method of control of contaminants and disposal of surface mining refuse;
>
> (vi) method of diverting surface waters around the disturbed area;
>
> (vii) method of restoration of stream channels and stream banks to a condition minimizing erosion and siltation and other pollution."
>
> Any mining activities would comply with the commitments of the HCP.

Water quality in the vicinity of underground and open pit mines is protected through the National Pollutant Discharge Elimination System Permit Program (WAC 173-220). The Department of Ecology administers this program and issues NPDES permits only to facilities that can meet the surface and groundwater standards described in WAC 173-201A and WAC 173-200, respectively.

Metals mining and milling is regulated by the Metals Mining and Milling Operations Act (RCW 78.56), which is mainly enforced by the Department of Ecology. An EIS is required for any proposed metal mining and milling operation. Any tailings facility must be designed to prevent the release of pollution and a waste rock management plan that emphasizes pollution prevention must be approved by the Department of Ecology (RCW 78.56.100). In Washington, there is a moratorium on the use of heap leach extraction processes and a prohibition on *in situ* extraction processes (RCW 78.56.160).

Another type of mining that could occur on DNR-managed forest land over the term of the HCP is placer mining. There are no commercial placer mines on DNR-managed forest lands, nor are there any commercial placer prospecting leases or mining contracts. But, recreational placer mining is growing in popularity. Recreational prospecting permits are issued by DNR (RCW 79.01.651). DNR establishes the rules for the location, equipment, methods, and other appropriate permit conditions of recreational prospecting on DNR-managed lands. Commercial placer prospectors and miners must obtain a hydraulic project approval permit from the Department of Fish and Wildlife (WAC 220-110), a NPDES permit from the Department of Ecology, a permit from the U.S. Army Corps of Engineers, and the action is subject to review under SEPA.

Oil and Gas Leases - There are approximately 77 existing leases and most are in the Puget Sound lowlands. Some are small leases but most leases cover full legal sections. The total acreage affected by all oil and gas leases is approximately 20,000 to 25,000 acres. Much oil and gas exploration is accomplished through a process known as "thumping." Thumping is the measurement of siesmolgocial tremors caused by the dropping of extremely large weights or the detonation of explosives. Exploration may also be acomplished through drilling. The on-site operations of exploratory wells can generally be contained in 5 acres or less. Historically, surface disturbance on these sites has been minimal. Only two wells have been drilled on DNR-managed land. One of these wells is currently being used for active exploration, and the other well has been abandoned and plugged. No oil or gas is currently produced on DNR-managed land. In fact, no oil or gas is currently produced in the state of Washington. All oil and gas leases go through a phased review under SEPA before the parcel is auctioned.

Potential adverse impacts of exploration and extraction on air and water are regulated by the Department of Ecology. Water quality in the vicinity of underground and open pit mines is protected through the National Pollutant Discharge Elimination System Permit Program (WAC 173-220). The Department of Ecology administers this program and issues individual permits only to facilities that can meet the surface and groundwater standards described in WAC 173-201A and WAC 173-200, respectively.

Oil and gas wells are regulated through the Oil and Gas Conservation Act (78.52) which is enforced by DNR. Sufficient safeguards to minimize hazards of pollution of all surface and ground waters is required. If acceptable safeguards cannot be provided, then a drilling permit is is not issued (RCW 78.52.125). Exploration holes drilled in search of oil or gas deposits must be plugged in a manner as to prevent the pollution of fresh water supplies (RCW 78.52.150). DNR would also require that the site be restored. For example, if the site was used for timber production before exploration, then, where feasible, the site would be restored for continued timber production.

Because the location and scope of eventual activities are not known, the initial SEPA review does not include details (for example, the management of riparian zones), but subsequent phased reviews would occur if and when additional activities are planned, and the depth of the review would depend on the activities planned. Before any surface disturbing work is conducted on a leased area, the lessee must file a plan of operations that is reviewed by the DNR administrative Region. Under the HCP, the activities would be reviewed to ensure compliance with the commitments of the HCP. Roads may be constructed during oil and exploration or extraction. Typically, these roads are part of the same road network used for forest management and would be subject to the same conservation measures for design, construction, use, maintenance, and abandonment described in the HCP. Oil or gas produced at a well site may be transported by truck or by pipeline. Pipeline construction is also subject to SEPA review.

Grazing Permits - There are approximately 15 permit and 6 leased ranges located in Yakima and Klickitat counties (approximately 100,000 acres) and the Methow valley (approximately 5,000 acres). Grazing occurs only on DNR-managed lands east of the Cascade crest where DNR is not applying for unlisted species agreements.

Electronic Site Leases - There are 427 leases with 100 sites, totaling 106 acres, currently extant. Hence, electronic sites average only about 1 acre in size. Approximately 80 percent of the sites are on non-forested mountain tops and the remaining 20 percent are on second-growth highway corridors. Roads are constructed to access electronic sites, but these roads are part of the same road network used for forest management and would be subject to the same conservation measures for design, construction, use, maintenance, and abandonment described in the HCP. Occasional disturbance to wildlife may occur during periodic visits for maintenance and improvements. On DNR-managed lands the impacts of electronic site leases relative to the impacts of timber management are *de minimus*.

Recreational Sites - Policy No. 29 of the Forest Resource Plan addresses recreation on state forest lands. It says:

> "The department will allow recreation on state forest land when compatible with the objectives of the Forest Resource Plan. As part of its efforts, the department will continue to comply with the Statewide Comprehensive Outdoor Recreation Plan."

There are approximately 150 total sites, most affecting less than 20 acres, and 2 to 3 large (300 to 600 acres), leased sites. Acreage by DNR administrative Region is Olympic = 141 acres, Central = 696 acres, South Puget Sound = 315 acres, Southwest = 159 acres, Northwest = 515 acres, Northeast =783, and Southeast = 630 acres. Total area of recreational sites is 3,239 acres. Many, if not most, recreational sites have been built in riparian areas. Under the HCP, future development of recreation sites would adhere to the riparian conservation strategy (HCP Chapter IV.D). Recreational activities conducted in DNR-managed forests include hiking, biking, horseback riding, skiing, ORV use (e.g., motorcycles, snowmobiles, 4-wheel drive trucks), and camping. Some trails, including those used by ORVs, are located within riparian areas. DNR is concerned about damage to aquatic resources caused by recreational activity in high use areas, and has undertaken a program in the Tahuya State Forest to develop and monitor measures that will mitigate these impacts. In general, on DNR-managed lands the impacts of recreational activity relative to the impacts of timber management are *de minimus*.

Activities in the East-side Planning Units

pg. IV.172 - add to end of the second paragraph:

...However, current insect populations indicate it is reasonable to expect between 2,000 and 15,000 acres of treatment in the east-side planning units during the first decade. Appropriate treatment might include site-specific application of insecticides. At some of these sites the application of insecticides could result in the incidental take of federally listed invertebrate species. Such activities shall be covered under the incidental take permit except for aerial application of pesticides, which shall be covered upon the Service's approval of a site-specific plan presented by DNR. If the Service disapproves such a plan, or if Service approval of such a plan is not forthcoming within 30 days of the Service's receipt of the plan, a multi-agency science team may be convened to resolve questions regarding the biological basis of the Service's decision.

Activities in the Five West-side Planning Units

pg. IV.175 - add to end of the fourth paragraph:
...Should unforeseen attacks by forest defoliators occur, they might require appropriate treatment to be determined at that time. Such appropriate treatment might include site-specific application of insecticides. At some of these sites the application of insecticides could result in the incidental take of federally listed invertebrate species. Such activities shall be covered under the incidental take permit except for aerial application of pesticides, which shall be covered upon the Service's approval of a site-specific plan presented by DNR. If the Service disapproves such a plan, or if Service approval of such a plan is not forthcoming within 30 days of the Service's receipt of the plan, a multi-agency science team may be convened to resolve questions regarding the biological basis of the Service's decision.

pg. IV.178 - change second full paragraph on page and separate into two paragraphs:
Various methods can be used to control competing vegetation. Site-specific conditions and management objectives are considered when choosing a control method. Forest Resource Plan Policy No. 33 tacitly directs DNR to minimize the use of herbicides. The policy directs DNR to weigh the effectiveness of herbicide use against likely adverse effects on public water supplies, public health, fish health, and fish and wildlife habitat. The strategy for minimizing herbicide use presented in Policy No. 33 (1992) is a conservation measure which is part of DNR's HCP.

Hand slashing or cutting of unwanted vegetation , ground or aerial application of herbicide, and combinations of these methods may be used...

Activities in the Olympic Experimental State Forest Planning Unit

pg. IV.181 - change last paragraph on page:
Due to the experimental nature of the OESF, it is difficult to quantify potential management activities. However, based on current inventory, the conservation strategies, and potential harvest opportunities, one can reasonably expect approximate ranges described in Table IV.~~14~~ 15 at the end of this section...

V. Plan Implementation

Monitoring

pg. V.1 - change last paragraph:
...Such monitoring will be primarily accomplished through ~~reporting methods that rely upon DNR's geographic information system and the use of remote sensing data and will likely involve little field data collection. Limited field work may be necessary to evaluate these methods.~~ DNR's planning and tracking, and geographic information systems. Statistically valid sampling of management activities will be conducted to evaluate the reliability of information stored in these databases.

pg. V.1 - insert subheadings and text before Monitoring heading:

Funding

DNR shall submit to the Washington State Legislature, on at least a biennial basis, an agency operating and capital budget for asset management that will be adequate to fulfill DNR's obligations under the HCP, ITP, and IA. Failure by DNR to ensure that adequate funding is provided to implement the HCP shall be grounds for suspension or partial suspension of the ITP.

Transition Activities

Timber sales prepared by DNR normally require approximately 24 months of preparation between the planning of the sale and its eventual auction. The HCP conservation strategies call for certain actions to occur (for example, the designation of the 300-acre spotted owl nest patches) and certain materials be prepared (for example, implementation guidelines for riparian areas) in the first year after approval. Additionally, once implementation guidelines are completed, training will be required for DNR staff. For these reasons, following approval of the HCP and issuance of the ITP, a transition period will be required. Timber sales in the DNR "pipeline" at the time of approval of the HCP will continue to be brought forward by DNR through the end of calendar year 1998, provided such sales are consistent with spotted owl survey agreements in effect between DNR and the USFWS. Such sales will not include known occupied marbled murrelet sites or unsurveyed, suitable marbled murrelet habitat. Because of current DNR actions such as spotted owl survey efforts and the deferral of sale of marbled murrelet habitat, it is believed that take of any listed species will be limited to non-existent. Mitigation for any such take has been included in the conservation strategies contained within the HCP.

pg. V.2 - change second paragraph:

Validation monitoring, which will occur only within the OESF Planning Unit, will document spotted owl and marbled murrelet use of areas managed to provide nesting habitat, and salmonid use of streams crossing DNR-managed lands. For spotted owls and marbled murrelets, ~~v~~Validation monitoring will rely upon surveys to detect changes in site occupancy, numbers and locations of breeding pairs, and reproduction, as appropriate for each species. For salmonids, validation monitoring will employ surveys to detect changes in the productivity of spawning adults and salmon-habitat relationships. As an additional objective for the OESF, validation monitoring reflects the emphasis on experimentation that defines the OESF...

pg. V.2 - change third paragraph:

...Implementation and effectiveness monitoring will be carried out for all of these major strategies. ~~In addition, validation monitoring will be carried out for spotted owl and marbled murrelet nesting habitat in the OESF. However, validation monitoring will not be undertaken for other conservation strategies.~~ The spotted owl conservation strategy, current spotted owl and marbled murrelet habitat, and current riparian ecosystem conditions are not uniform across planning units. Effectiveness monitoring will necessarily be tailored to the conservation strategy and habitat or ecosystem conditions in each planning unit.

pg. V.2 - add to the beginning of the fourth paragraph:
Validation monitoring will be carried out for spotted owl nesting habitat, marbled murrelet nesting habitat, and salmonid habitat in the OESF. Validation monitoring will not be undertaken for the other conservation strategies or in other planning units. ~~Nor will v~~Validation monitoring will not be undertaken for spotted owl dispersal habitat. ~~Because t~~ The OESF spotted owl conservation strategy does not draw the management distinction between NRF habitat and dispersal habitat that prevails in other HCP planning units~~, this issue does not pertain there~~. In the other planning units, an evaluation of the cause-and-effect relationship between conditions on DNR-managed lands and the ability of juvenile spotted owls to disperse successfully across the landscape would be difficult to design, expensive to implement, and impractical to undertake, given the distribution of DNR-managed lands...

pg. V.2 - last paragraph:
Validation monitoring for salmonid habitat will be focused to detect changes in the productivity of spawning adults and salmon-habitat relationships, parameters that are not affected by marine conditions and downstream fisheries ~~will not be undertaken for riparian/salmonid habitat~~. This will involve estimating numbers of spawning adults and numbers of recruits, (i.e., out migrating smolts or rearing juveniles), and surveying different stream habitat types and conditions to determine fish numbers, species composition, and densities. Validation monitoring for salmonid habitat will be conducted in an appropriate watershed unit comprised primarily of DNR-managed lands, to minimize the potential influences of management activities not under DNR's control. ~~Attempts to evaluate cause-and-effect relationships between conditions on DNR-managed lands and salmonid populations would be confounded by the watershed-level effects of a wide range of forestry and non-forestry activities involving other jurisdictions, and by at-sea effects including salmon fisheries. Resources for monitoring the HCP's success in providing riparian/salmonid habitat will be better directed at in-stream and bank conditions, and riparian forest conditions throughout the west-side HCP planning units. Data needed to "validate" the model underlying the OESF riparian conservation strategy will be collected as part of effectiveness monitoring or through research.~~ Validation monitoring will not be conducted for any other, non-salmonid fish species, or for wildlife species (other than spotted owls and marbled murrelets) influenced by the riparian/salmonid conservation strategy.

pg. V.3 - change first full paragraph:
Effectiveness and validation monitoring need not be undertaken while the interim murrelet conservation strategy is in effect. Although lower quality habitat types that support up to 5 percent of the total murrelet use of DNR-managed lands within each of the five west-side and the OESF planning units may be harvested under the interim strategy, DNR will not alter or manage the ~~95 percent~~ higher quality murrelet nesting habitat which supports 95 percent of potentially occupied sites during this period...

pg. V.3 - add new paragraph prior to heading "Monitoring Procedures":
DNR recognizes the substantial financial commitment that the HCP monitoring program entails. DNR will provide adequate funding for monitoring to the extent that DNR is given the flexibility to make such budget decisions. DNR shall request funds from the

Legislature to cover the costs of the monitoring program. The exact funding level may vary from year to year, depending on actions of the Legislature.

pg. V.3 - change last paragraph:
...Monitoring procedures will be prepared by ~~DNR in consultation with the U.S. Fish and Wildlife Service~~ a team of scientists from DNR, U.S. Fish and Wildlife Service, and National Marine Fisheries Service. Implementation, effectiveness, and validation monitoring procedures will be completed and reviewed before forest management activities consistent with a conservation strategy are first undertaken. Tables V.2 and V.3 outline some of the environmental variables that will be measured as part of effectiveness monitoring for the spotted owl and riparian conservation strategies, respectively.

Research

pg. V.5 - change both bullets and add a third bullet under subheading Priority 2 - Riparian:

- Determine how to harvest timber and meet conservation objectives within riparian ~~buffers~~ areas.

- Determine how to harvest timber and meet conservation objectives on hillslopes with high mass-wasting potential without triggering land slides and causing adverse effects to fish habitat.

- Determine the best approach to growing healthy riparian buffers while managing the buffer for economic return.

pg. V.6 - change the first bullet on page:

- Determine whether it is possible to harvest timber at or near breeding sites and meet conservation objectives.

pg. V.6 - delete last bullet on page and make a sentence:
Other research topics may arise as the HCP is implemented and new knowledge is obtained.

Reporting	No change
VI. Alternatives to the Habitat Conservation Plan that Would Avoid Take	No change
No Action/No Change (Current Practices)	No change
No Harvest/No Take	No change
A Appendix	No change
Geographic Analysis	No change

B Appendix
Draft Implementation Agreement (Under separate cover)

(Note: The complete revised Implementation Agreement is published as final is Appendix 4 of the Final EIS.)

References

Chapter I Literature Cited — No change
Chapter II Literature Cited — No change

Chapter III Literature Cited

Add to the reference list:

Kasworn, W. F., and T. L. Manley. 1989. Road and trail influences on grizzly bears and black bears in northwest Montana. Int. Conf. Bear Res. and Manage. v. 8, p. 79-84.

Mace, R. D., and T. L. Manley. 1993. South Fork Flathead River Grizzly Bear Project: Progress Report of 1992. Montana Department Fish, Wildlife, and Parks, Helena, MT.

McLellan, B. N., and D. M. Shackleton. 1988. Grizzly bears and resource-extraction industries: effects of roads on behaviour, habitat use, and demography. Journal of Applied Ecology. v. 25, p. 451-460.

Chapter IV Literature Cited

Add to the reference list:

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Perry, C., and R. Overly. 1977. Impact of roads on big game distribution in portions of the Blue Mountains of Washington, 1972-73. Washington Game Department Appl. Res. Sect., Bull. 11, Olympia. 39 p.

Pyle, R. M. 1989. Washington butterfly conservation status report and plan. Washington Department of Wildlife, Nongame Program, Olympia. 217 p.

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Thomas, J. W. et al. 1993. Viability assessments and management considerations for species associated with late successional and old-growth forests of the Pacific Northwest. U.S. Department of Agriculture, National Forest System, Forest Service Research, Washington, D.C. 530 p.

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U.S. Fish and Wildlife Service. 1984. Northern Rocky Mountain wolf recovery plan. U.S. Department of the Interior, U.S. Fish and Wildlife Service, Denver, CO.

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pg. 47 - delete from reference list:

~~Washington Department of Natural Resources, Olympic Region. 1995. Clallam River landscape plan. Washington Department of Natural Resources, Olympic Region, Forks, WA. 86 p.~~

Chapter V Literature Cited	No change
Unpublished References	No change
Personal Communications	No change
Glossary	No change

Tables

I.1	DNR-managed HCP lands by dominant size class and area for uneven-aged stands	No change
I.2	Acreage by ownerships in the area covered by the HCP	No change
I.3	Vegetative zones in the area covered by the HCP	No change
I.4	Major features and acreage of DNR-managed lands by planning unit and planning area	No change
III.1	Estimates of forest cover types on lands of different ownerships in the Olympic Experimental State Forest area, July 1991	No change
III.2	Northern spotted owl site centers on or affecting DNR-managed lands as of the end of the 1995 survey season	No change
III.3	Characteristics of nest stands used by the marbled murrelet	No change
III.4	Characteristics of nest trees used by the marbled murrelet	No change
III.5	Old-growth, large-saw, and small-saw forests below 3,500 feet and less than 66 miles from marine waters, by ownership	No change
III.6	Allocation of survey areas in each planning unit, by habitat type and distance from marine waters	No change
III.7	Prescribed number of visits for each survey area for both years of the DNR marbled murrelet forest habitat relationships studies	No change
III.8	Federally listed wildlife, their state status, and their potential occurrence in HCP planning units	No change
III.9	Life cycles of western Washington anadromous salmonids in freshwater, by species and run	No change
III.10	Status of salmonid stocks in the five west-side planning units and the Olympic Experimental State Forest	No change
III.11	Percent of DNR-managed forest land west of the Cascade crest in Watershed Analysis Units that contain salmonids	No change
III.12	Estimated miles of fishbearing streams on DNR-managed lands west of the Cascade crest	No change
III.13	Percent of total land area west of the Cascade crest that impacts salmonids and is managed by DNR	No change

pg. III.75 - change Table III.14

Table III.14 Other species of concern, by federal and state status and their potential occurrences in the HCP planning units

Federal candidate, category 1 - Substantial data support listing the species as endangered or threatened; listing proposals are either under way or delayed.

Federal candidate, category 2 - Data point to listing species but not conclusively; additional data are being collected.

Under state status, S = state; E = endangered; T = threatened; C = candidate; M = monitor; G = game; Sen = sensitive.
OESF = Olympic Experimental State Forest.

Species	State status	Planning Unit: Klickitat	Columbia	South Coast	South Puget	Yakima	Chelan	North Puget	Straits	OESF
Federal candidate ~~- category 1~~										
spotted frog	SC	X	X		X	X	X	X		
Federal ~~candidate - category 2~~ species of concern										
Newcomb's littorine snail	SM			X						
California floater	—	X	X			X	X			
great Columbia River spire snail	SC	X	X							
Beller's ground beetle	SC				X			X		
Hatch's click beetle	SC				X			X		
Fender's soliperlan stonefly	—		X		X					
~~Lynn's clubtail~~	—	~~X~~				~~X~~				
river lamprey	—		X	X	X			X	X	X
Pacific lamprey	—	X	X	X	X			X	X	X
~~green sturgeon~~	—		~~X~~	~~X~~						
~~Olympic mudminnow~~	~~SC~~		~~X~~	~~X~~	~~X~~				~~X~~	X
Larch Mountain salamander	SSen	X	X							
tailed frog	SM	X	X	X	X	X	X	X	X	X
~~northern red-legged frog~~	—		~~X~~	~~X~~	~~X~~			~~X~~	~~X~~	~~X~~
Cascades frog	—	X	X		X	X		X	X	X

Table III.14 Other species of concern, by federal and state status and their potential occurrences in the HCP planning units *(continued)*

Species	State status	Planning Unit: Klickitat	Columbia	South Coast	South Puget	Yakima	Chelan	North Puget	Straits	OESF
Federal ~~candidate - category 2~~ species of concern *(continued)*										
northwestern pond turtle	SE	X	X		X			X		
~~Harlequin duck~~	~~SG~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~
northern goshawk	SC	X	X	X	X	X	X	X	X	X
black tern	SM	X	~~X~~	~~X~~	~~X~~	X	X	~~X~~		
olive-sided flycatcher	—	X	X	X	X	X	X	X	X	X
~~little willow flycatcher~~	—	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~
long-eared myotis	SM	X	X	X	X	X	X	X	X	X
fringed myotis	SM	X	X			X				
long-legged myotis	SM	X	X	X	X	X	X	X	X	X
small-footed myotis	SM	X	X			X				
~~Yuma myotis~~	—	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~
~~spotted bat~~	—	~~X~~				~~X~~	~~X~~			
Townsend's big-eared bat	SC	X	X	X	X	X	X	X	X	X
Pacific fisher	SC		X	X	X	X	X	X	X	X
California wolverine	SM		X		X	X	X	X		
lynx	ST						X			
California bighorn sheep	SG					X	X			
State-listed, no federal status										
sandhill crane	SE	X	X							
western gray squirrel	ST	X			X	X	X			

Table III.14 Other species of concern, by federal and state status and their potential occurrences in the HCP planning units *(continued)*

Species	State status	Planning Unit: Klickitat	Columbia	South Coast	South Puget	Yakima	Chelan	North Puget	Straits	OESF
State candidate, no federal status										
green sturgeon	—		X	X						
long-horned leaf beetle	SC							X		
Dunn's salamander	SC			X						
Van Dyke's salamander	SC		X	X	X				X	X
California mountain kingsnake	SC	X	X							
common loon	SC			X	X		X	X	X	X
golden eagle	SC	X	X	X	X	X	X	X	X	X
Vaux's swift	SC	X	X	X	X	X	X	X	X	X
Lewis' woodpecker	SC	X	X	X	X	X	X	X	X	
pileated woodpecker	SC	X	X	X	X	X	X	X	X	X
purple martin	SC	X	X	X	X			X	X	
western bluebird	SC	X	X	X	X	X	X	X	X	
Other sensitive species										
Lynn's clubtail	—	X				X				
Olympic mudminnow	SC		X	X	X				X	
northern red-legged frog	—		X	X	X			X	X	X
Harlequin duck	SG	X	X	X	X	X	X	X	X	X
little willow flycatcher	—	X	X	X	X	X	X	X	X	X
Yuma myotis	—	X	X	X	X	X	X	X	X	X

III.15 Federally listed and proposed vascular plant taxa in the area covered by the HCP — No change

pg. III-101 and III-102 - create a new Table III.16

Table III.16: Federal candidate vascular plant taxa in the area covered by the HCP

NHP = Natural Heritage Program; POEX = possibly extinct or extirpated; E = endangered; T = threatened; S = sensitive; OESF = Olympic Experimental State Forest; WW = western Washington; EW = eastern Washington within the range of the northern spotted owl.

Scientific name	NHP status	HCP planning areas	Geographic area and/or habitat
Sidalcea oregana var.calva	E	EW	Wenatchee Mountains; meadow and forest

pg. III-101 and III-102 - renumber, rename, and change Table III.16:

Table III.~~16~~17: ~~Federal candidate~~ Federal species of concern vascular plant taxa in the area covered by the HCP

delete two species, add three new species and one footnote:

Scientific name	HCP status	HCP planning area	Geographic area and/or habitat
Astragalus australis var. *olympicus*	T	WW	NE Olympic Mts. talus/scree
Castilleja cryptantha	S	WW	Mt. Rainier moist meadows
Lathyrus torreyi	--**	WW	Clark, Pierce counties mixed conifer forest
~~*Poa unilateralis*~~	~~T~~	~~WW~~	~~Pacific County, ocean bluffs~~
~~*Sidalcea organa* var. *Calva**~~	~~E~~	~~EW~~	~~Wenatchee Mountains; exposed rock~~

** The NHP status of Lathyrus torriyi was undetermined as of August 1996. It was thought to be possibly extirpated until a population was discovered on McChord Air Force Base in 1994

IV.1 Spotted owl nest tree characteristics in western Washington — No change

IV.2 Spotted owl nest stand characteristics in western Washington — No change

IV.3 Recommended method for estimating habitat quality for spotted owls using tree- and stand-level indices of mistletoe infection — No change

IV.4 Summaries of current spotted owl habitat conditions by planning unit — No change

pg IV.78 - change the fourth column of Table IV.5:

Table IV.5: Two estimates of the current abundance of potential spotted owl habitat in proposed landscape planning units of the Olympic Experimental State Forest

Old Forest[3] Inv./TM
3/9
~~2~~ 3/14
14/14
~~4~~ 5/23
~~25~~ 27/27
~~19~~ 21/18
22/23
~~16~~ 18/13
~~26~~ 30/25
~~13~~ 16/16
~~22~~ 23/16

IV.6 An estimate of the future abundance of potential spotted owl habitat in proposed landscape planning units of the Olympic Experimental State Forest and the forest at large based on one set of harvest regimes — No change

pg. IV.98 - change Table IV.7

IV.7 Expected average widths of interior-core riparian buffers in the Olympic Experimental State Forest

Buffer widths will be determined on a site-specific basis using the proposed 12-step watershed assessment procedure (see text) and might vary locally with landform characteristics. Average widths are not expected to vary significantly, however, because these values are derived from a statistical analysis of buffer protection previously applied to about 55 percent of DNR-managed lands in the OESF. (See text for discussion.) Widths are expressed for each stream type as average ~~slope~~ horizontal distances measured outward from the ~~active channel margin~~ 100-year flood-plain on either side of the stream.

Stream type	Width of riparian interior-core buffer (~~slope~~ horizontal distances, rounded to the nearest 10 feet)
1	150
2	150
3	100
4	100
5	width necessary to protect identifiable channels and unstable ground (see text)

pg. IV.105 - change Table IV.8:

Table IV.8: Proposed average widths of exterior riparian buffers in the Olympic Experimental State Forest

Widths are expressed as average ~~slope~~ horizontal distances measured outward from the interior-core buffer on either side of the stream. Widths are proposed as a working hypothesis and are based on local knowledge of windthrow behavior. Buffer widths and design will be evaluated through experiments in buffer design in the OESF. Buffers will be applied where necessary (see text).

Stream type	Width of riparian exterior buffer (~~slope~~ horizontal distances, rounded to the nearest 10 feet)
1	150
2	150
3	150
4	50
5	50

IV.9 Proposed protection of forested and nonforested wetlands in the Olympic Experimental State Forest — No change

pg. IV.111 - change Table IV.10

Table IV.10: Comparison of average riparian buffer widths expected as a result of applying the Olympic Experimental State Forest riparian conservation strategy and buffer widths proposed in the literature for several key watershed parameters

Buffer widths are given as average ~~slope~~ horizontal distances (or range of averages) outward from the active channel margin.

Key watershed parameter	Buffer width by stream type - proposed for the OESF				
	1	2	3	4	5
Mass wasting	150 ft all Type 1 streams will be protected	150 ft all Type 2 streams will be protected	100 ft all Type 3 streams will be protected	100 ft all Type 4 streams will be protected	0-500+ ft; depends on size of contribution area[1] and amount of unstable ground[2]
Mass wasting and windthrow combined	150 ft inner, 150 ft outer[3]	150 ft inner, 150 ft outer[3]	100 ft inner, 150 ft outer[3]	100 ft inner, 50 ft outer[3]	variable inner, 50 ft outer[3]

Key watershed parameter	Buffer width by stream type - proposed in the literature[4]				
	1	2	3	4	5
Coarse-woody-debris recruitment[5]	108-168 ft	108-168 ft	105-153 ft	105-153 ft	105-153 ft
Stream shade availability[5]	108-168 ft	108-168 ft	105-153 ft	105-153 ft	105-153 ft
Riparian forest microclimate[6]	300 ft	300 ft	250 ft for >5-ft-wide channels	125 ft	
Channel bank stability	Commensurate with mass-wasting buffer protection on stream channels.				
Lateral channel migration	Commensurate with combined mass-wasting and windthrow protection on stream channels.				
Water quality[5]	108-168 ft	108-168 ft	105-153 ft	105-153 ft	105-153 ft
Water quantity	Unknown. Objectives of proposed buffers are to help moderate peak-flow discharges related to removal of vegetation (e.g., harvest) by ensuring hydrologic maturity of forests, as per Washington Forest Practices Board (1994).				
Windthrow	Unknown. Objectives of proposed buffers are to enhance stand wind-firmness by decreasing tree height/diameter ratios, fetch distances in adjacent harvest units, and edge effect.				
Surface and road erosion	Variable, depending on site conditions. Objectives are to minimize erosion through implementation and comprehensive road-maintenance plans for each landscape unit (see text).				

[1] "Contribution area" refers to upslope channel heads, bedrock hollows, unchannelized valleys, and topographic depressions; see discussion of OESF Type 5 drainages in the Draft EIS that accompanies this HCP.

[2] Refer to discussion of Type 5 drainages in the Draft EIS that accompanies this HCP.

[3] Exterior (wind) buffer, where harvest and management activities are allowed. On Type 5 streams, exterior buffers will only be applied as necessary where there are interior-core buffers. See text.

[4] See discussion in this section of the text for citations of current literature.

[5] Buffer widths are based on available literature citing one site potential tree height for each stream type as the ecologically appropriate measure; see discussion in text.

[6] Buffers widths are recommended by FEMAT (1993) and Cederholm (1994).

IV.11	Components of a preliminary assessment of physical and biological watershed conditions for the 12-step watershed assessment procedure for the Olympic Experimental State Forest	No change
IV.12	Number of acres and percent of land base projected in the Olympic Experimental State Forest riparian interior-core buffer, exterior buffer, and combined (total) buffer, by forest age class	No change

pg. IV.160-162 - delete Table IV.13 entirely and replace with:

Table IV.13: Habitats and representative wildlife species covered by this HCP for the west-side planning units

(Source: Brown 1985 Thomas et al. (1993), Parsons et al. (1991) and Pyle (1989).

Type of habitat	Representative species that can use these habitat types
Spotted owl high quality nesting habitat	dusky shrew, long-eared myotis, northern flying squirrel, Pacific fisher, wood duck, northern goshawk, barred owl, pileated woodpecker, olive-sided flycatcher, northern spotted owl, hoary bat, bushy-tailed woodrat, red tree vole, harlequin duck, marbled murrelet, Vaux's swift, red-breasted nuthatch, Dunn's salamander, Larch Mountain salamander, Van Dyke's salamander, tailed frog, pine white butterfly, Johnson's hairstreak butterfly, *Acalypta saudersi* (a lace bug), *Cychrus tuberculatus* (a carabid beetle), *Lobosoma horridum* (a weevil), *Omus dejeani* (a tiger beetle)
Spotted owl sub-mature habitat	dusky shrew, long-legged myotis, northern flying squirrel, Pacific fisher, wood duck, hairy woodpecker, northern goshawk, barred owl, olive-sided flycatcher, northern spotted owl, hoary bat, bushy-tailed woodrat, red tree vole, red-breasted nuthatch, Dunn's salamander, northwestern salamander, Van Dyke's salamander, tailed frog, northern alligator lizard, pine white butterfly, coral hairstreak butterfly, California hairstreak butterfly, *Cychrus tuberculatus* (a carabid beetle), *Lobosoma horridum* (a weevil), *Omus dejeani* (a tiger beetle)
Spotted owl dispersal habitat	Douglas' squirrel, sharp-shinned hawk, Swainson's thrush, evening grosbeak, dusky shrew, northern spotted owl, long-legged myotis, mountain beaver, creeping vole, bobcat, elk, Vaux's swift, orange-crowned vireo, northern alligator lizard, rubber boa, long-toed salamander, *Cychrus tuberculatus*

Table IV.13: Habitats and representative wildlife species covered by this HCP for the west-side planning units (continued)

Type of habitat	Representative species that can use these habitat types
Spotted owl dispersal habitat *(continued)*	(a carabid beetle), *Lobosoma horridum* (a weevil), *Omus dejeani* (a tiger beetle)
Marbled murrelet habitat	dusky shrew, long-legged myotis, northern flying squirrel, Pacific fisher, wood duck, northern goshawk, barred owl, hairy woodpecker, Oliver-sided flycatcher, marbled murrelet, hoary bat, bushy-tailed woodrat, red tree vole, harlequin duck, Vaux's swift, red-breasted nuthatch, Dunn's salamander, Larch Mountain salamander, Van Dyke's salamander, tailed frog, pine white butterfly, Johnson's hairstreak butterfly, *Acalypta saudersi* (a lace bug), *Cychrus tuberculatus* (a carabid beetle), *Lobosoma horridum* (a weevil), *Omus dejeani* (a tiger beetle)
Conifer-dominated riparian ecosystems	long-legged myotis, Pacific fisher, mink, wood duck, sharp-shinned hawk, ruffed grouse, olive-sided flycatcher, purple martin, Dunn's salamander, Van Dyke's salamander, salamander, tailed frog, dusky shrew, Trowbridge's shrew, southern red-backed vole, river otter, Barrow's goldeneye, band-tailed pigeon, long-eared owl, red-breasted sapsucker, hermit thrush, evening grosbeak, Cascade frog, bull trout, coho salmon, steelhead salmon, mayflies, stoneflies, caddisflies, midges, arborvitae hairstreak butterfly
Hardwood-dominated riparian ecosystems	long-legged myotis, mink, wood duck, purple martin, northwestern pond turtle, common garter snake, Dunn's salamander, northern red-legged frog, ruffed grouse, dusky shrew, shrew mole, yellowpine chimunk, river otter, Barrow's goldeneye, Cooper's hawk, band-tailed pigeon, downy woodpecker, black-headed grosbeak, Olympic salamander, Olympic mudminnow, mayflies, stoneflies, caddisflies, dreamy duskywing butterfly, western tiger swallowtail

Table IV.13: Habitats and representative wildlife species covered by this HCP for the west-side planning units (continued)

Type of habitat	Representative species that can use these habitat types
Nonforested wetland	northern harrier, common snipe, northwestern pond turtle, northern red-legged frog, spotted frog, Beller's ground beetle, long-horned leaf beetle, Hatch's click beetle, mallard, mink, dusky shrew, Pacific shrew, coast mole, Yuma myotis, long-tailed vole, American bittern, little willow flycatcher, common loon, sandhill crane, black tern, coho salmon, Olympic mudminnow, dragonflies, damselflies, sonora skipper butterfly
Forested wetland	long-legged myotis, Pacific fisher, ruffed grouse, sharp-shinned hawk, barred owl, olive-sided flycatcher, purple martin, Van Dyke's salamander, northern red-legged frog, mink, spotted frog, dusky shrew, water shrew, bushy-tailed woodrat, common merganser, band-tailed pigeon, northern saw-whet owl, red-breasted sapsucker, western toad, dragonflies, flies, cad-disflies, pale tiger swallowtail butterfly
Cliffs	fringed myotis, long-legged myotis, Yuma myotis, mountain goat, peregrine falcon, turkey vulture, black swift, cliff swallow, western fence lizard, bushy-tailed woodrat, golden eagle, wasps, shorttailed black swallowtail butterfly
Caves	Townsend's big-eared bat, fringed myotis, long-legged myotis, Yuma myotis, coyote, California wolverine, mountain lion, bobcat, black swift, Larch Mountain salamander, crickets
Oak woodland	western gray squirrel, Lewis' woodpecker, California mountain kingsnake, Propertius' duskywing butterfly, Oregon green hairstreak butterfly
Talus	Cascade golden-mantled ground squirrel, mountain goat, Pacific fisher, California wolverine, bobcat, white-tailed ptarmigan, common nighthawk, rosy finch, western fence lizard, Larch Mountain salamander, Dunn's salamander, Van Dyke's salamander, wolf spiders, jumping spiders, small-footed myotis

Table IV.13: Habitats and representative wildlife species covered by this HCP for the west-side planning units (continued)

Type of habitat	Representative species that can use these habitat types
Grass/forb forest stage	coast mole, vagrant shrew, Townsend's vole, coyote, long-tailed weasel, black-tailed deer, common nighthawk, white-crowned sparrow, northwestern garter snake, western fence lizard, northwestern salamander, western bluebird, wolf spiders, grasshoppers, mariposa copper butterfly, silvery blue butterfly, Blackmore's blue butterfly, western meadow fritillary butterfly, *Oncocnemis dunbari* (a moth), *Formica neorufibarbis* (an ant)
Shrub forest stage	coast mole, Townsend's vole, mountain beaver, coyote, long-tailed weasel, black-tailed deer, common nighthawk, blue grouse, rufous hummingbird, hermit thrush, white-crowned sparrow, rufous-sided towhee, northwestern garter snake, western fence lizard, northwestern salamander, western bluebird, Pacuvius' duskywing butterfly, satyr anglewing butterfly
Open sapling/pole forest stage	coast mole, Douglas' squirrel, mountain beaver, black-tailed deer, long-tailed weasel, coyote, blue grouse, rufous hummingbird, American robin, hermit thrush, rufous-sided towhee, western fence lizard, western bluebird, Phoebus parnassian butterfly, golden hairstreak butterfly, western tailed blue butterfly, bobcat, snowshoe hare
Closed sapling/pole/sawtimber forest stage	Douglas' squirrel, sharp-shinned hawk, Swainson's thrush, evening grosbeak, dusky shrew, long-legged myotis, mountain beaver, creeping vole, bobcat, elk, Vaux's swift, orange-crowned vireo, northern alligator lizard, rubber boa, long-toed salamander, *Cychrus tuber-culatus* (a carabid beetle), *Lobosoma horridum* (a weevil), *Omus dejeani* (a tiger beetle)

Table IV.13: Habitats and representative wildlife species covered by this HCP for the west-side planning units (continued)

Type of habitat	Representative species that can use these habitat types
Large sawtimber forest stage	dusky shrew, long-legged myotis, northern flying squirrel, Pacific fisher, wood duck, hairy woodpecker, northern goshawk, barred owl, olive-sided flycatcher, hoary bat, bushy-tailed woodrat, red tree vole, red-breasted nuthatch, Dunn's salamander, northwestern salamander, Van Dyke's salamander, tailed frog, northern alligator lizard, coral hairstreak butterfly, pine white butterfly, California hairstreak butterfly, *Cychrus tuberculatus* (a carabid beetle), *Lobosoma horridum* (a weevil), *Omus dejeani* (a tiger beetle)
Old-growth forest stage	Johnson's hairstreak butterfly, pine white butterfly, *Acalypta saudersi* (a lace bug), *Cychrus tuberculatus* (a carabid beetle), *Lobosoma horridum* (a weevil), *Omus dejeani* (a tiger beetle); and see list for spotted owl high quality nesting habitat

pg. IV.162 - add a new Table IV.14:

IV.14 DNR HCP Stand Structure Objectives at Year 100 (in percent of land area)

Stand Stage[1]	West-side Planning Units Excluding the OESF	OESF Planning Unit
Open (0-10 Years)	5-10	5-15
Regeneration (10-20 years)	5-15	5-15
Pole (20-40 years)	15-25	5-15
Closed (40-70 years)	25-35	5-15
Complex (at least 70 years)	25-35	60-70
Fully Functional	(At least 150 years)	(At least 200 years)
(Subset of Complex)	10-15	10-15

[1]Stand stages are defines as:

Open- earliest seral stage; overstory has been removed; dominated by herbs and shrubs with some young conifer and deciduous trees present.

Regeneration-shrubs and saplings; branches beginning to intertwine; dense canopies from ground-level upwards.

Pole - early stages of stem exclusion; stems closely spaced and numerous; little understory; limited self-pruning; and insufficient canopy lift to allow larger birds to penetrate.

Closed - have undergone some stem exclusion and competition mortality; have achieved some canopy lift from self-pruning; have well-developed, deep canopies; and lacking complex structural characteristics of older types.

Complex - stocked with large trees with a variety of diameters and heights evident; mortality within the stand (or residual trees, snags, and logs) provides cavities in standing snags, downed logs, deformities in standing live trees; large horizontal branches; and a complex canopy with conifer establishment occurring under opening in the canopy.

Fully Functional - a subset of complex forests but more mature and structurally complex.

[2]Age-classes shown are a surrogate for stand structure. If and when it can be shown that appropriate structure can be obtained at a different age, different age classes may be used.

Assumptions used in the modeling included policies from the Forest Resource Plan and are described in Appendix 5 of this document. The FRP states that the goal for average rotation age for west-side conifer dominated forests will be 60 years. At present, DNR expects to continue this policy and information regarding the average rotation age will be provided to the Services at scheduled inter-agency reviews of the HCP. However, as long as DNR can show that reaching the stand structure objectives is likely, other rotation ages may be used. Additionally, DNR maintains the flexibility to harvest specific stands at an earlier age to address specific silvicultural situations (for example, a 30- to 35-year old stand that was not thinned at an appropriate age may be more quickly converted into a healthy, productive stand by clear-cutting the stand and "starting over").

Subsequent to the modeling exercise, DNR and the Services negotiated a 70-year term for this agreement, with provisions for up to 3, 10-year extensions (see IA). Such extensions could occur at DNR's option if commitments of the HCP are met at year 70, or at the Service's option if commitments have not been met at year 70. Currently no projections are available for the forest structure expected at year 70. However, during the first year following approval of the HCP, additional modeling will be conducted by DNR by decade and the resulting projections provided to the Service at or by the first annual review. These decadal projections will be used by the DNR as part of its monitoring process.

The projections for year 70 will be a part of the Service's evaluation of whether DNR has met the commitments of the HCP at year 70. In that evaluation the Service will also review DNR's progress in meeting the conservation objectives included in Chapter IV of the HCP. The DNR HCP provides for the conservation of both listed and unlisted species. Detailed, specific conservation measures are described elsewhere in this chapter for for the northern spotted owl and a long-term strategy will be developed for the marbled murrelet with additional important, but more limited, measures described for certain other listed species. Conservation measures affecting the unlisted species include those undertaken for listed species and additional measures described for certain important habitat types. However, the most important conservation measures affecting unlisted species are those associated with the HCP riparian conservation strategy.

Of the HCP's three primary conservation components (spotted owl conservation strategy, marbled murrelet conservation strategy, and riparian conservation strategy), one, that for the marbled murrelet, is interim in nature. A long-term strategy will not be developed for a number of years. Because of this, an adequate and appropriate means of evaluating commitments for the marbled murrelet at year 70 cannot be described at this time except in terms of compliance with the strategy described in the HCP.

The riparian conservation strategy will be implemented in the five west-side planning units and the OESF. DNR's compliance and effectiveness monitoring plan for riparian areas should provide sufficient information for the Service to determine whether commitments in this area have been met at year 70.

The spotted owl conservation strategy sets specific goals for developing/maintaining NRF and dispersal habitat in specific amounts and locations (by WAU). Approximately 200,000 acres are designated for a NRF habitat role and 125,000 of those acres (62.5%) are in WAUs that are already at or above the goals set in the HCP. The conditions in the remaining WAUs, those that are not currently at or above the goal, will be reviewed by the Service at year 70, as part of the evaluation of whether the DNR has met its obligations under the HCP.

As described above, the 70 year term should be sufficient for all species based upon the anticipated response of the habitats to implementation of the HCP. Riparian areas and uncommon/special habitats (e.g., talus, caves, wetlands) are expected to improve as wildlife habitat over the life of the permit. Older stand structures (i.e., Structurally Complex Forest and Fully Functional Forest) increase or remain constant when

comparing the current conditions with those anticipated at the end of the permit period. Healthy riparian systems, mature forest with structure, and uncommon/special habitats comprise the major concerns regarding adequacy of habitats. Younger forests (less than 40-70 years) will continue to be provided as a result of timber management. In addition, the long-term plan for murrelets will be developed in consideration of the 70-year permit term to ensure its adequacy. Finally, as mentioned above in this section, the Services will review DNR's progress in meeting the conservation objectives and will have the option for approving an extension of the HCP in the event the conservation objectives are not met.

pg. IV.182 - renumber Table IV.14:

IV.~~14~~ 15 Estimated amount of forest land management activities on DNR-managed lands in the area covered by the HCP during the first decade of the HCP

pg. IV.183 - renumber Table IV.15:

IV.~~15~~ 16 Estimated amount of habitat on DNR-managed lands in the area covered by the HCP at the end of the first decade of the HCP

pg. V.3 - change Table V.1:

Table V.I: Outline of the HCP monitoring program

	HCP habitat goals			
Monitoring objective	**Spotted owl nesting, roosting, foraging habitat**	**Spotted owl dispersal habitat**	**Marbled murrelet nesting habitat[1]**	**Riparian/salmonid habitat**
Implementation	All planning units	All planning units	Five west-side planning units and the OESF	Five west-side planning units and the OESF
Effectiveness	All planning units	All planning units	Five west-side planning units and the OESF	Five west-side planning units and the OESF
Validation	OESF Planning Unit only		OESF Planning Unit only	OESF Planning Unit only (salmonid habitat only)

[1]Only implementation monitoring will be done during the interim conservation strategy for the marbled murrelet. See text.

pg. V.3 - add two new tables:

Table V.2: Environmental variables to be measured in effectiveness monitoring for the Spotted Owl Conservation Strategy

Environmental Variables	
Spotted owl nesting, roosting, and foraging habitat	**Spotted owl dispersal habitat**
density of nesting structures snag density snag diameter distribution	
tree density tree species composition tree diameter distribution canopy closure canopy height woody debris ground cover prey density	

Table V.3: Environmental variables to be measured in effectiveness monitoring for the Riparian Conservation Strategy

Salmonid Habitat Element	Environmental Variables
Large Woody Debris	linear density size category tree species shape of form decay category location category poolforming function
Channel characteristics	bankfull width bankfull depth stream gradient total water surface area pool maximum depth pool residual depth pool location pool frequency
Sediments	percent fine sediment in spawning gravel

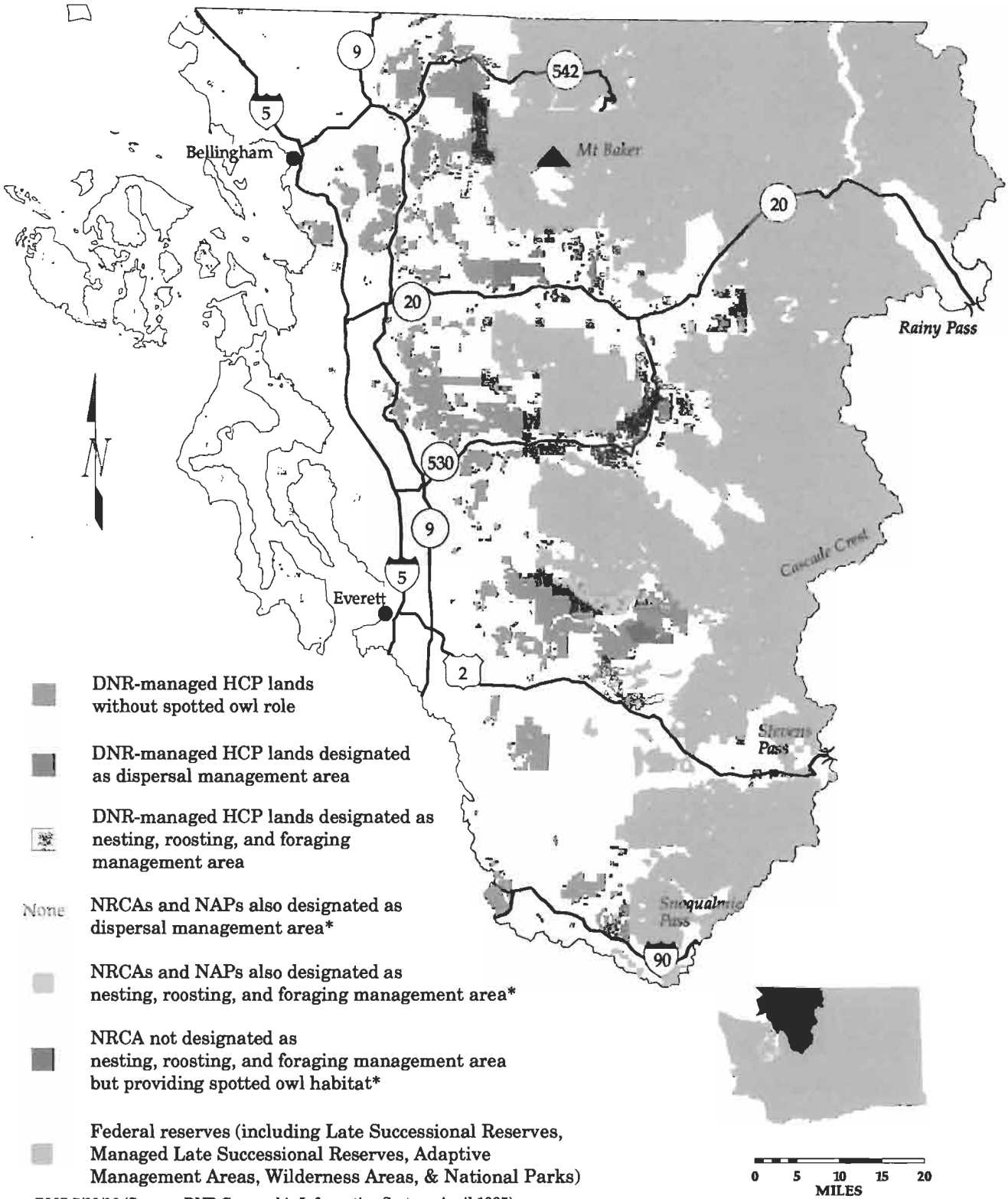
Salmonid Habitat Element	Environmental Variables
Riparian Forest	stand age stand species composition canopy closure

Figures

Maps

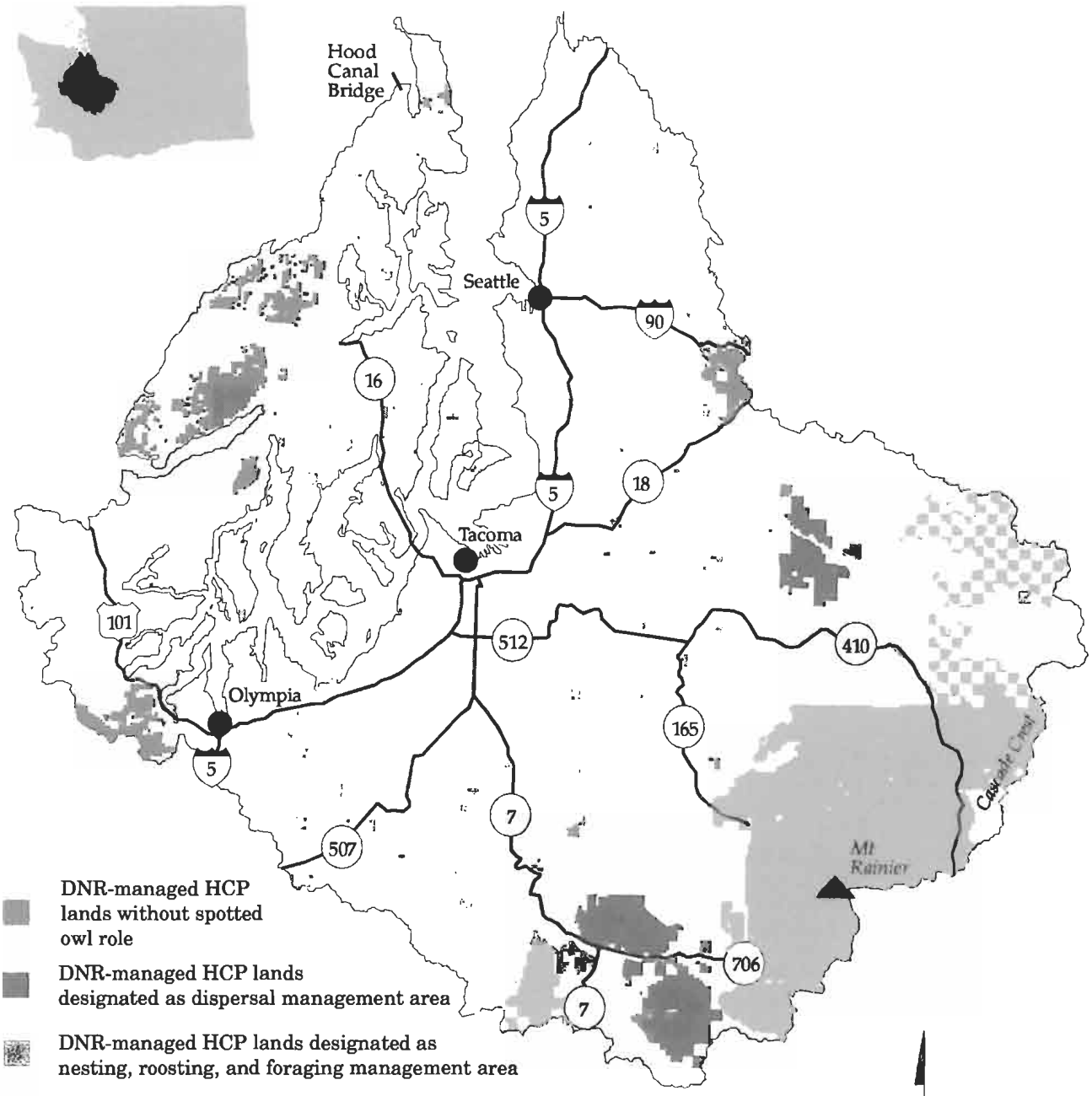
I.6	South Puget Planning Unit	No change
I.7	Columbia Planning Unit	No change
I.8	Straits Planning Unit	No change
I.9	South Coast Planning Unit	No change
I.10	Klickitat Planning Unit	No change
I.11	Yakima Planning Unit	No change
I.12	Chelan Planning Unit	No change
I.13	The Olympic Experimental State Forest Planning Unit	No change
II.1	DNR-managed trust lands in the area covered by the HCP	No change
III.1	Physiographic provinces of the northern spotted owl	No change
III.2	Range of the marbled murrelet and population sizes along the Pacific coast	No change

Map IV.1: Role of DNR-managed lands in providing mitigation for the northern spotted owl in the North Puget Planning Unit



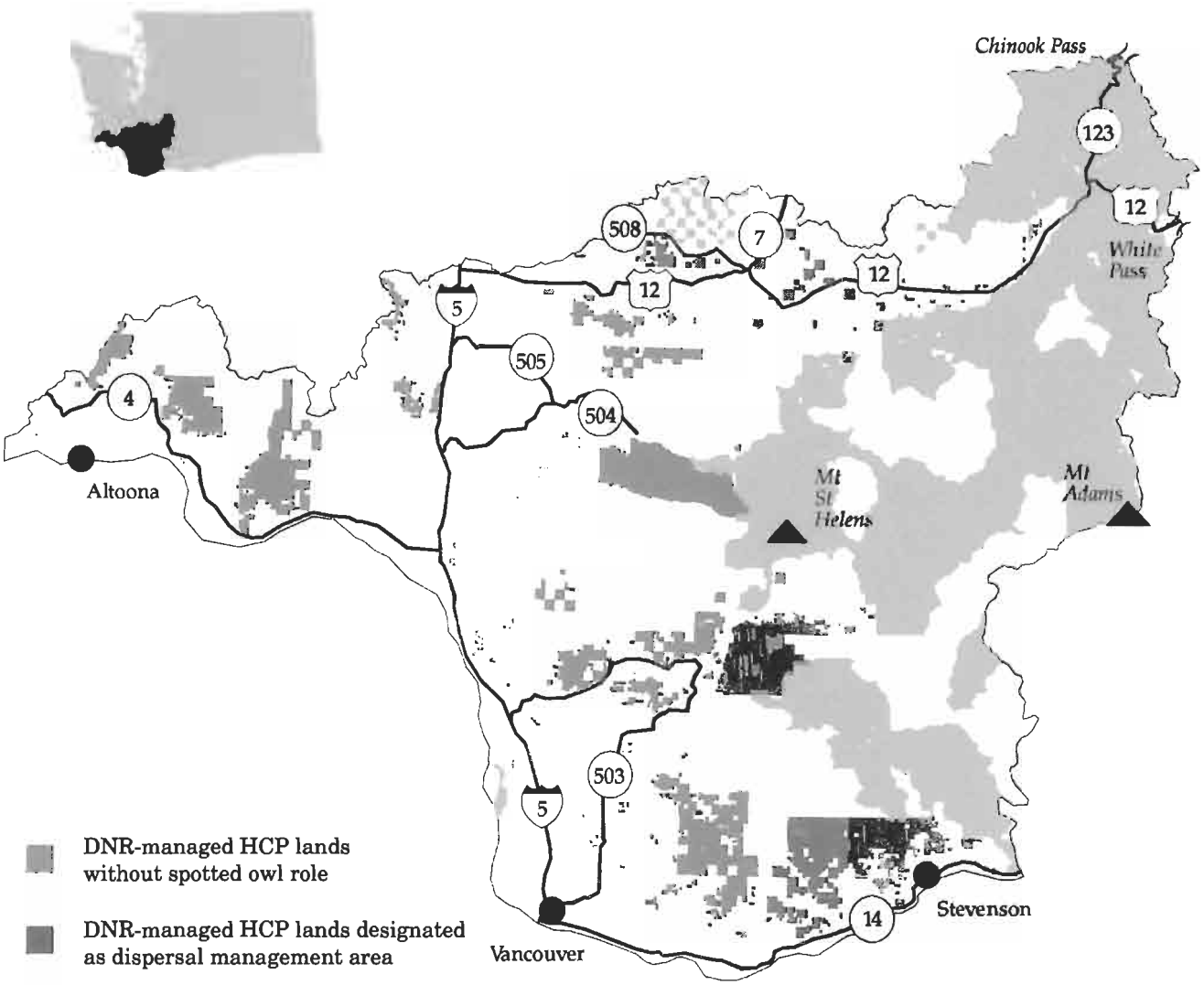
RMS 7/22/96 (Source: DNR Geographic Information System, April 1995)
This map is for planning purposes only.
*Natural Resource Conservation Areas and Natural Area Preserves:
See section in Chapter I titled Land Covered by the HCP.

Map IV.2: Role of DNR-managed lands in providing mitigation for the northern spotted owl in the South Puget Planning Unit



RMS 7/22/96 (Source: DNR Geographic Information System, April 1995)
This map is for planning purposes only.
*Natural Resource Conservation Areas and Natural Area Preserves: See section in Chapter I titled Land Covered by the HCP.

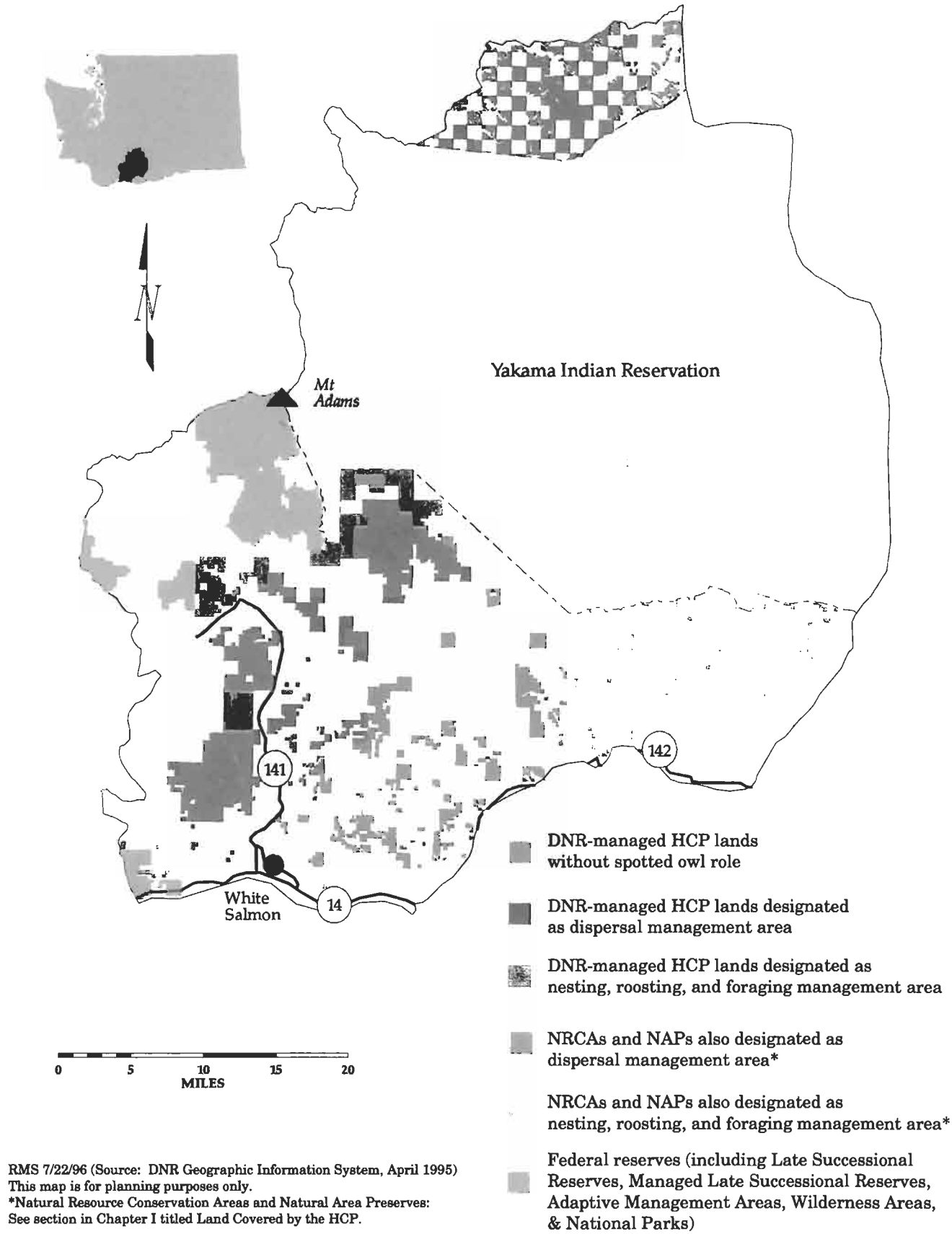
Map IV.3: Role of DNR-managed lands in providing mitigation for the northern spotted owl in the Columbia Planning Unit



RMS 7/22/96 (Source: DNR Geographic Information System, April 1995)
This map is for planning purposes only.
*Natural Resource Conservation Areas and Natural Area Preserves: See section in Chapter I titled Land Covered by the HCP.

IV.4	Role of DNR-managed lands in providing mitigation for the northern spotted owl in the Straits Planning Unit	No change
IV.5	Role of DNR-managed lands in providing mitigation for the northern spotted owl in the South Coast Planning Unit	No change

Map IV.6: Role of DNR-managed lands in providing mitigation for the northern spotted owl in the Klickitat Planning Unit



RMS 7/22/96 (Source: DNR Geographic Information System, April 1995)
This map is for planning purposes only.
*Natural Resource Conservation Areas and Natural Area Preserves: See section in Chapter I titled Land Covered by the HCP.

IV.7	Role of DNR-managed lands in providing mitigation for the northern spotted owl in the Yakima Planning Unit	No change
IV.8	Role of DNR-managed lands in providing mitigation for the northern spotted owl in the Chelan Planning Unit	No change
IV.9	Preliminary boundaries for landscape planning units in the Olympic Experimental State Forest	No change